REMARKS

AMENDMENTS TO THE SPECIFICATION

The Title of the specification was amended to delete the plural "S" from the "PHOSPHATASE" term, to append "THE " prior to the "NOVEL" term, and to append the phrase ", RET31, AND VARIANTS THEREOF" after the "PHOSPHATASE" term. These amendments were made solely to make the Title consonant with the claimed invention. Support for these amendments may be found on pages 9 thru 11, and pending Claims 26 to 30, 38 to 47, and 57 to 68. No new matter has been added.

The instant specification was replaced with a Substitute Specification to correct the various aberrant ATCC deposit and SEQ ID NO references objected to by the Examiner, in addition to correct a variety of other minor typographical and grammatical errors identified by Applicants. Each amendment has been either underlined or denoted using strike-through formatting, in accordance with 37 CFR 1.125(c), as applicable. All substantive amendments specifically listed and addressed herein have also been included in the Substitute Specification for the convenience of the Examiner.

The paragraph beginning on page 7, line 17 was amended to replace the first phrase "XXXXX" with the ATCC Deposit Number "PTA-3949", in addition to replace the second phrase "XXXXX" with the deposit date for "PTA-3949" as "December 22, 2001". Applicants respectfully point out to the Examiner that the BMY_HPP1 clone was deposited with the ATCC on December 22, 2001 and assigned ATCC Deposit No. PTA-3949 as evidenced by the official ATCC Deposit Form (submitted concurrently herewith). The BMY_HPP1 clone is specifically referenced on the ATCC Deposit Form (referenced as "BMY-hPP1" in the "Identification Reference by Depositor" section). In addition, the Attorney Docket No. for the present case, D0072, is specifically listed on the last line of the Form. In accordance with 37 CFR 1.804 (MPEP 2406.01), and in view of In re Lundak, 773 F.2d 1216 227 USPQ 90 (Fed. Cir. 1985), Applicants believe no new matter has been added.

The paragraph beginning on page 7, line 22 was amended to replace the first phrase "XXXXX" with the ATCC Deposit Number "PTA-3949", in addition to replace the second phrase "XXXXX" with the deposit date for "PTA-3949" as "December 22, 2001". Applicants respectfully point out to the Examiner that the BMY_HPP2 clone was deposited with the ATCC on December 22, 2001 and assigned ATCC Deposit No. PTA-3949 as evidenced by the official ATCC Deposit Form (submitted concurrently herewith). The BMY_HPP2 clone is specifically referenced on the

ATCC Deposit Form (referenced as "BMY-hPP2" in the "Identification Reference by Depositor" section). In addition, the Attorney Docket No. for the present case, D0072, is specifically listed on the last line of the Form. In accordance with 37 CFR 1.804 (MPEP 2406.01), and in view of In re Lundak, 773 F.2d 1216 227 USPQ 90 (Fed. Cir. 1985), Applicants believe no new matter has been added.

The paragraph beginning on page 8, line 5 was amended to delete the phrase ", or the amino acid sequence encoded by the cDNA clone, mRET31, deposited as ATCC Deposit Number XXXXXX on XXXXXX" to address the Examiners objection to the same. No new matter has been added.

The paragraphs beginning on page 8, line 10, and on page 8, line 15 have been deleted since they are duplicates of the paragraphs beginning on page 7, line 17, and on page 7, line 22.

Table I was amended to replace the phrase "XXXXX" with the ATCC Deposit Number "PTA-3949", in addition to replace the second phrase "Xx/Xx/Xx" with the deposit date for "PTA-3949" as "12/22/01" for "BMY_HPP1_FL" as well as "BMY_HPP2_FL".

STATUS OF THE CLAIMS:

Claims 1 to 25, 31 to 37, and 48 to 56 are cancelled.

Claims 28 and 39 were amended.

Claims 57 to 69 were added.

Claims 26 to 30, 38 to 47, and 57 to 69 are pending.

Claim 28 has been amended to replace the phrase "comprises of" with the term "comprises" in order to address the Examiners objection to the same. Applicants right to equivalents of Claim 28 is reserved. No new matter has been added.

Claim 39 has been amended to replace the term "sequences" with the term "sequence" in order to address the Examiners objection to the same. Applicants right to equivalents of Claim 29 is reserved. No new matter has been added.

New Claims 57, 58, and 59 were added. Support for these new claims may be found in original Claims 48 to 55, in SEQ ID NO:42, SEQ ID NO:190, and SEQ ID NO:191 of the Sequence Listing, and throughout the specification as originally filed.

New Claims 60 to 66 were added. Support for these new claims may be found in original Claims 26, 31, 32, 33, 34, 35, 36, and 37. No new matter has been added.

New Claims 67 to 69 were added. Support for these new claims may be found in original Claims 26, 31, 32, 33, 34, in SEQ ID NO:42, SEQ ID NO:190 and SEQ ID NO:191, and throughout the specification as originally filed. No new matter has been added.

I. Miscellaneous

a. **Public Access to and Viability of ATCC Deposit No. PTA-3434 and PTA-2966**

Applicants representative hereby gives the following assurance by signature below:

Bristol-Myers Squibb Company, an assignee of the present application, has deposited biological material under the terms of the Budapest Treaty on the International Recognition of the Deposit of Micro-organisms for the Purposes of Patent Procedure with the following International Depository Authority: American Type Culture Collection (ATCC), 10801 University Boulevard, Manassas, Virginia 20110-2209. The deposits comprise the cDNA sequences encoding the RET31 and BMY_HPP5 polypeptides of the present invention. The deposit for RET31 was made on June 7, 2001, and given ATCC Accession Number PTA-3434. The deposit for BMY_HPP5 was made on January 24th, 2001, and given ATCC Accession Number PTA-2966. In accordance with MPEP 2410.01 and 37 C.F.R. § 1.808, assurance is hereby given that all restrictions on the availability to the public of ATCC Accession Numbers PTA-3434 and PTA-2966 for the RET31 and BMY_HPP5 clones will be irrevocably removed upon the grant of a patent based on the captioned application, except as permitted under 37 C.F.R. § 1.808(b).

Applicants representative also hereby gives the following additional assurance by signature below:

In accordance with 37 C.F.R. § 1.805 to § 1.807, assurance is hereby given that the viability of the deposit for RET31, made on June 7, 2001, and given ATCC Accession Number PTA-3434, in addition to the viability of the deposit for BMY_HPP5, made on January 24th, 2001, and given ATCC Accession Number PTA-2966, will be maintained during the pendency of the captioned application for a duration of at least 30 years or at least five years after the most recent request for the furnishing of a sample of the deposit is received by the ATCC, or whichever is longer; and that the deposit will be replaced if it should ever become inviable.

b. **Priority**

The Examiner states that "Neither application 60/256,868 nor application 60/280, 186 disclose the sequences of SEQ ID NO: 108 or SEQ ID NO: 109. The sequences of SEQ ID NO: 108

and 109, as well as the mutations of residues 180, 193,284, and 293 recited in the instant application, are disclosed in applications 60/287,735, 60/295,848, and 60/300,465."

In response, Applicants point out that the earliest provision applications, namely U.S. Serial No. 60/256,868 and U.S. Serial No.60/280,186, both disclose the sequence of the BMY_HPP5 clone (SEQ ID NO:41; which encodes the polypeptide provided as SEQ ID NO:42), which is a minor variant of the sequence provided as SEQ ID NO:108 and 109 (see Exhibit A submitted concurrently herewith). Exhibit A provides a polypeptide alignment between SEQ ID NO:109 of the instant specification with SEQ ID NO:42 from U.S. Serial No. 60/256,868 and U.S. Serial No.60/280,186. As shown, SEQ ID NO:42 differs from SEQ ID NO:109 at each of amino acids 180, 193, 293, and 315 and is thus explicitly encompassed by new Claim 57. Since at least one claim of the instant specification is supported by provisional applications, U.S. Serial No. 60/256,868 and U.S. Serial No.60/280,186, Applicants are entitled to rely upon the same as a basis for priority. Applicants point out that SEQ ID NO:41 and SEQ ID NO:42 are also specifically disclosed in U.S. Serial No. 60/287,735, U.S. Serial No. 60/295,848, and U.S. Serial No. 60/300,465, as well.

c. **Objections to the Specification**

The Examiner has objected to Applicants specification "for failing to disclose specific SEQ ID Nos being recited and the ATCC deposit numbers and dates of deposit for specific clones. See, for example, page 7, line 20 to page 8, line 19, page 188, lines 27-28, page 189, line 50 to page 190, line 6, and Table I. All proper SEQ ID Nos, ATCC numbers, and dates of deposit should be inserted into the specification. Correction is required".

In response, Applicants have substituted a marked and clean copy of a Substitute Specification which addresses the ATCC deposit number and SEQ ID Nos objections presented by the Examiner. The Substitute Specification also corrects a number of other typographical and grammatical errors identified by Applicants, including the deletion of URL or hyperlink references. No new matter has been added. Applicants point out that both the minor amendments, as well as, all substantive amendments explicitly referred to individually herein, have also been entered by submission of the Substitute Specification for the convenience of the Examiner.

The Examiner has further objected to Applicants specification stating that the specification contains "improper formatting and/or fonts, for example, on page 432-433". In response, Applicants have corrected the improper formatting with the Substitute Specification submitted concurrently herewith.

The Examiner has further objected to Applicants specification stating that the specification contains "blank areas, for example, on page 455. The specification should be carefully checked for blank spaces". In response, Applicants have removed the referenced blank area, in addition to any other blank areas found within the specification, with the Substitute Specification submitted concurrently herewith.

d. **Objections to the Claims**

The Examiner has objected to the Claims, in general, stating that the "claim set is objected to for inconsistency in the presentation of the word 'claim'. In some claims said word is presented as 'claim' e.g. Claim 27, while in other claims the word is presented as 'Claim' e.g. Claim 49".

In response, Applicants point out that only Claims 49 to 55 are affected by this objection and that each of these claims have been cancelled. As a consequence, Applicants believe the Examiners objection to the claim set has been rendered moot in consideration of these amendments.

The Examiner has objected to Claims 28 and 32 stating that these "are objected to for the phrase "comprises of nucleotides" on line 2, which should be corrected to "comprises nucleotides"".

In response, Applicants have amended Claim 28 to reflect the proper language as recommended by the Examiner. Claim 32 has been cancelled. Applicants believe the Examiners objection to Claim 28 and 32 have been overcome in consideration of these amendments and cancellations.

The Examiner has objected to Claims 39 and 40 stating that Claim 39 is indefinite for reciting "vector sequences of claim 38" since "Claim 38 recites an individual vector sequence. It is suggested that Claim 39 be amended to recite "vector sequence of claim 38" or, more concisely, "vector of claim 38". Claim 40, as dependent on Claim 39, is rejected for the same reason."

In response, Applicants have amended Claim 39 to change the phrase "vector sequences" to "vector sequence". Applicants believe the Examiners objection to Claims 39 and 40 have been overcome in consideration of these amendments.

The Examiner has objected to Claims 44 to 47 stating that these claims are "objected to for reciting non-elected subject matter; polynucleotides comprising the cDNA clone contained in plasmid BMY-HPP5, as set forth by SEQ ID NO: 41 (Table I)".

In response, Applicants do not agree with the Examiners allegation and point out that Applicants are entitled to have claims directed to a species upon the allowance of a genus or linking claim provided that the species claims "are written in dependent form or otherwise include all the

limitations of an allowed generic claim as provided in 37 CFR 1.141". The BMY_HPP5 clone represents a minor variant of the elected RET31 clone, in addition to representing a species of new Claim 69 (see Exhibit A submitted concurrently herewith). Since Applicants believe Claim 69 is allowable, Applicants believe it is proper to maintain Claim 44(b) since it necessarily includes all of the limitations of Claim 69. Applicants believe the Examiners objection to Claims 44 to 47 has been overcome in consideration of the amendments and/or arguments presented herein relative to the allowability of Claim 69.

The Examiner has objected to Claim 48 stating that this claim uses "improper Markush language. When materials recited in a claim are so related as to constitute a proper Markush group, they may be recited in the conventional manner, or alternatively. For example, if "wherein R is a material selected from the group consisting of A, B, C and D" is a proper limitation, then "wherein R is A, B, C or D" shall also be considered proper. (M.P.E.P. 2173.05)".

In response, Applicants disagree and point out that it was not Applicants intention to model Claim 48 into a Markush group. Nonetheless, Claims 48 thru 55 have been cancelled in favor of new Claims 57 to 59. Applicants believe the Examiners objection to Claim 48 has been overcome in consideration of these amendments.

II. Rejections under 35 U.S.C. § 101

a. The Examiner has rejected 48 to 50 and 56 under 35 U.S.C. § 101, alleging that the claimed invention is unpatentable over Claims 1-14 of US Application 10/648,593 under the judicially created obviousness-type double patenting doctrine. More particularly, the Examiner alleges that "Claims 48-50 and 56 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-14 of US Application 10/648,593, which has the same owner as the instant application (M.P.E.P. 804). Although the conflicting claims are not identical, they are not patentably distinct from each other. Claims 48-50 and 56 herein and Claims 1-14 of US Application 10/648,593 are both directed to a polynucleotide encoding the polypeptide set forth by SEQ ID NO: 109 herein, wherein said polypeptide has a methionine residue at position 180 and a asparagine residue at position 193. Said polynucleotide and polypeptide are set forth by SEQ ID NO: 123 and 247, respectively, of 10/648,593. The claims differ in that Claims 1-14 of US Application 10/648,593 also recite a plurality of polynucleotides comprising the specified as well as additional polynucleotides, while Claims 48-50 and 56 herein also recite polynucleotides encoding additional variants of SEQ ID NO: 109. The portion of the specification in 10/648,593 that supports the recited polynucleotide, Table 2 and Claim 3, includes embodiments that would anticipate Claims 48-50 and 56 herein, e.g., a polynucleotide encoding the polypeptide set forth by SEQ ID NO: 109 herein, wherein said polypeptide has a methionine residue at position 180 and a asparagine residue at position 193, which is also the polynucleotide specifically recited in Claims 1-14 of US Application 10/648,593. Claims 48-50 and 56 herein cannot be considered patentably distinct over Claims 1-14 of US Application 10/648,593 when there are specifically recited embodiments (polynucleotides encoding the protein set forth

by SEQ ID NO: 247 of 10/648,593) that would anticipate Claims 48-50 and 56 herein. Alternatively, Claims 48-50 and 56 herein cannot be considered patentably distinct over Claims 1-14 of US Application 10/648,593 when there are specifically disclosed embodiments in 10/648,593 that supports Claims 1-14 of that application and falls within the scope of Claims 48-50 and 56 herein, because it would have been obvious to a skilled artisan to modify the plurality of polynucleotides of Claims 1-14 of US Application 10/648,593 by selecting a specifically disclosed embodiment that supports those claims, i.e., polynucleotides encoding the protein of SEQ ID NO: 247, as disclosed in 10/648,593 and specifically recited in Claim 3. One having ordinary skill in the art would have been motivated to do this, because such an embodiment, said polynucleotides, is disclosed as being a preferred embodiment within Table 2 and Claim 3 of 10/648,593."

Applicants respectfully disagree with the Examiners allegation that the claims in the instant specification and Claims 1-14 of U.S. Serial No. 10/648,593 are "not patentably distinct from each other". Specifically, the instant claims are directed to polynucleotides encoding the polypeptide set forth as SEQ ID NO:109, while the claims in U.S. Serial No. 10/648,593 are directed to methods of using the disclosed polynucleotides and polypeptides – both of which are patentably distinct and recognized by the USPTO as being separate invention types. Applicants also point out that U.S. Serial No. 10/648,593 has an effective filing date of August 27, 2002, while the instant specification has an effective filing date of December 20, 2000. As a consequence, it is not possible for the teachings of U.S. Serial No. 10/648,593 to anticipate the inventions disclosed in the instant specification since the latter was filed almost two years prior to the instant specification. As a consequence, Applicants believe the rejection of Claims 48 to 50 and 56 under is not proper.

As discussed *supra*, Applicants have cancelled Claims 48 to 50, and 56 rendering the Examiners rejection of Claims 48 to 50, and 56 under 35 U.S.C. § 101 moot. Newly added Claims 57 to 59, while based in-part on the subject matter encompassed by Claims 48 to 50 and 56, are directed to sequences that are unique from SEQ ID NO:247 of U.S. Serial No. 10/648,593. In addition, SEQ ID NO:109 of the instant specification is also unique from the SEQ ID NO:247 of U.S. Serial No. 10/648,593 (see Exhibit B submitted concurrently herewith). Exhibit B provides a polypeptide alignment between SEQ ID NO:109 of the instant specification with SEQ ID NO:247 of U.S. Serial No. 10/648,593. As a consequence, Applicants do not believe the Examiners rejection of Claims 48 to 50 and 56 under 35 U.S.C. § 101 is proper since SEQ ID NO:247 of U.S. Serial No. 10/648,593 does not disclose all of the elements of any of the claims of the instant invention. Applicants request that the Examiner withdraw the rejection under 35 U.S.C. § 101.

In the instance where the rejection under 35 U.S.C. § 101 for judicial obviousness-type double patenting is maintained, Applicants point out that since this rejection is provisional, no action is required by Applicants at the present time. Applicants also point out, in accordance with MPEP

804(I)(C), that when two applications are filed by the same inventive entity or by different inventive entities having a common inventor, and/or common assignee, that "if the 'provisional' double patenting rejection in one application is the only rejection remaining in that application, the examiner should then withdraw that rejection and permit the application to issue as a patent, thereby converting the 'provisional' double patenting rejection in the other application(s) into a double patenting rejection at the time the one application issues as a patent." Since Applicants believe all of the Examiners rejections have been overcome in consideration of Applicants amendments and/or arguments presented herein, Applicants respectfully request the instant application be allowed to issue.

III. Rejections under 35 U.S.C. § 112, second paragraph

> a. The Examiner has rejected Claims 34, 39, 40, and 56 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More particularly, the Examiner has rejected Claim 56 as being "indefinite in reciting 'conservative substitutions' which is not defined in the specification. Although very common in the art, the term "conservative substitution" is vague and indefinite. For example, is a Gln/Glu substitution or an Asp/Asn substitution conservative? Are Ser/Tyr and Phe/Tyr- conservative substitutions? Another situation that is indefinite is the classification of Gly and Ala; are these small polar residues, similar to Ser, Thr, Gln and Asn, or hydrophobic? Is His basic or hydrophobic? Are linear hydrophobic amino acids similar to aromatic hydrophobic amino acids? Is Cys a small polar amino acid or its own category? Is Tyr a polar amino acid or an aromatic amino acid? Lack of consensus on the answers to these questions causes the term "conservative substitution" to be indefinite."

Applicants disagree and point out that Table VII of the instant specification clearly defines preferred conservative substitutions of the present invention. However, in the sole interest of facilitating prosecution, Applicants have cancelled Claim 56. As a consequence, the Examiners rejection of Claim 56 under 35 U.S.C. § 112, second paragraph has been rendered moot.

Relative to Claim 34, the Examiner does not state any basis for rejecting this claim under 35 U.S.C. § 112, second paragraph. Thus, Applicants attribute the Examiners listing of Claim 34 within this section of the Office Action as an error and request that the Examiner withdraw the rejection of Claim 34 under 35 U.S.C. § 112, second paragraph.

Relative to Claims 39 and 40, the Examiner does not state any basis for rejecting these claims under 35 U.S.C. § 112, second paragraph, as well. It is noted that the Examiner has objected to these Claims elsewhere in the Office Action on account of Applicants use of the term "sequences" as opposed to "sequence". As discussed *supra*, Applicants have amended Claim 39 to recite the term

"sequence" and have overcome the Examiners objection to the same. If the basis for the Examiners listing of Claims 39 and 40 within the rejection under 35 U.S.C. § 112, second paragraph is different than the latter, Applicants attribute the Examiners listing of these Claims within this section of the Office Action as an error and request that the Examiner withdraw the rejection of Claims 39 and 40 under 35 U.S.C. § 112, second paragraph.

IV. Rejections under 35 U.S.C. § 112, First Paragraph

a. The Examiner has rejected Claims 48 to 56 under 35 U.S.C. § 112, first paragraph, alleging that these claims are not enabled. More particularly, the Examiner alleges that "Claims 48-56 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for polynucleotides encoding the polypeptide of SEQ ID NO: 109, does not reasonably provide enablement for any polynucleotide encoding residues 2-665 of SEQ ID NO: 109 wherein one or more residues of 180, 193,284, 293, 302, 315, or 584 are substituted with any amino acid or any polynucleotide encoding a mutant of the R~T31 polypeptide wherein the mutant retains binding for substrate but the ability to dephosphorylate the substrate is reduced. The specification does not enable any person skilled in the oat to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims...Claims 48-55 are so broad as to encompass any polynucleotide encoding residues 2-665 of SEQ ID NO: 109 wherein one or more residues of 180, 193,284, 293,302, 315, or 584 are substituted with any amino acid. Claim 56 is so broad as to encompass any polynucleotide that encodes a mutant of the RET31 polypeptide (residues 2-665 of SEQ ID NO: 109), wherein the mutant comprises at least one amino acid substitution within residues 158 to 297, with at least one substitution being a conservative substitution, and wherein the mutant retains binding for substrate but the ability to dephosphorylate the substrate is reduced. The scope of each of these claims is not commensurate with the enablement provided by the disclosure with regard to the extremely large number of polynucleotides broadly encompassed by the claims. Since the amino acid sequence of a protein determines its structural and functional properties, predictability of which changes can be tolerated in a protein's amino acid sequence and obtain the desired function, including substrate binding with reduced phosphatase activity, requires a knowledge of and guidance with regard to which amino acids in the protein's sequence, if any, are tolerant of modification and which are conserved (i.e. expectedly intolerant to modification), and detailed knowledge &the ways in which the protein's structure relates to its function. However, in this case the disclosure is limited to the amino acid sequence of SEQ ID NO: 109 and the nucleotide sequence of SEQ ID NO: 108."

Applicants disagree with the Examiner and point out that the instant specification teaches that deletion of over 50% of the RET31 polypeptide (deletion of amino acids 303 to 665 of SEQ ID NO:109) results in a protein that not only retains phosphatase activity, but exceeds wild-type levels of phosphatase activity by nearly five fold (see Figure 36 and Example 57). As a consequence, Applicants believe the Examiners allegation that Applicants have not enabled minor amino acid substitutions is largely moot since the RET31 polypeptide is clearly very tolerant of amino acid

changes. However, in the sole interest of facilitating prosecution, Applicants have cancelled Claims 48 to 56, and added new Claims 57 to 59. New Claims 57 to 59 are based, in-part, on the subject matter encompassed by Claims 48 to 55, but are narrower in scope in that each Claim is directed to individually disclosed species of RET31. Applicants believe the scope of new Claims 57 to 59 is reasonable and is enabled based upon the teachings of the instant specification. Applicants believe the Examiners rejection of Claims 48 to 56 has been rendered moot in consideration of Applicants cancellation of the same and that new Claims 57 to 59 are allowable.

> **b.** The Examiner has rejected Claim 44 under 35 U.S.C. § 112, first paragraph, alleging that it contains "subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention." More particularly, the Examiner alleges that "The invention employs a novel plasmid encoding RET31 deposited with ATCC as No. PTA-3434. Since the plasmid is essential to the claimed invention, it must be obtainable by a repeatable method set forth in the specification or otherwise be readily available to the public. The claimed plasmid's sequences are not fully disclosed nor have they been shown to be readily available to the public. The specification does not disclose a repeatable process to obtain the vectors and it is not apparent if the DNA sequences are readily available to the public. Accordingly, it is deemed that a deposit of these plasmids should have been made in accordance with 37 CFR 1.801-1.809... If the deposit is/was made under the terms of the Budapest Treaty, then an affidavit or declaration by applicants, or a statement by an attorney of record over his or her signature and registration number, stating that the specific strain has been deposited under the Budapest Treaty and that the strain will be irrevocably and without restriction or condition released to the public upon the issuance of the patent, would satisfy the deposit requirement made herein."

In response, Applicants representative has provided the required assurance in the "Miscellaneous" section of Applicants Reply *supra*. Since the ATCC deposits have been submitted in accordance with the Budapest Treaty, Applicants do not believe they need to provide explicit assurances that access to the invention will be afforded to the Commissioner upon request during the pendency of the application. Applicants believe the Examiners rejection of Claim 44 has been overcome in consideration of Applicants assurances provided herein.

> **c.** The Examiner has rejected Claims 48 to 56 under 35 U.S.C. § 112, first paragraph, alleging that it contains "as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention". More particularly, the Examiner alleges that "These claims are directed to a genus of DNA molecules either encoding any polypeptide comprising residues 2-665 of SEQ ID NO: 109 wherein one or more residues of 180, 193,284, 293,

302, 315, or 584 are substituted with any amino acid, wherein the polypeptide has phosphatase activity (Claims 48-55) or a genus of polynucleotides that encodes a mutant of the RET31 polypeptide (residues 2-665 of SEQ ID NO: 109), wherein the mutant comprises at least one amino acid substitution within residues 158 to 297, with at least one substitution being a conservative substitution, and wherein the mutant retains binding for substrate but the ability to dephosphorylate the substrate is reduced (Claim 56). The specification teaches the structure of no representative species of such DNAs. Moreover, the specification fails to describe any representative species by any identifying characteristics or properties other than the functionality of encoding either a polypeptide comprising residues 2-665 of SEQ ID NO: 109 wherein one or more residues of 180, 193,284, 293,302, 315, or 584 are substituted with any amino acid, wherein the polypeptide has phosphatase activity (Claims 48-55) or a mutant of the RET31 polypeptide (residues 2-665 of SEQ ID NO: 109), wherein the mutant comprises at least one amino acid substitution within residues 158 to 297, with at least one substitution being a conservative substitution, and wherein the mutant retains binding for substrate but the ability to dephosphorylate the substrate is reduced (Claim 56). Given this lack of description of representative species encompassed by the genus of the claim, the specification fails to sufficiently describe the claimed invention in such full, clear, concise, and exact terms that a skilled artisan would recognize that applicants were in possession of the claimed invention."

Applicants disagree and point out that Applicants were, in fact, in possession of each of the species encompassed by Claims 48 to 56 as evidenced by pages 164 to 173 of the instant specification, in addition to SEQ ID NO:42, SEQ ID NO:109, SEQ ID NO:190, and SEQ ID NO:191. However, in the sole interest of facilitating prosecution, Applicants have cancelled Claims 48 to 56, and added new Claims 57 to 59. New Claims 57 to 59 are based, in-part, on the subject matter encompassed by Claims 48 to 55, but are narrower in scope in that each Claim is directed to individually disclosed species of RET31. Applicants believe the scope of new Claims 57 to 59 is reasonable and the teachings of the instant specification is sufficient to demonstrate that Applicants were in possession of these species based upon their explicit disclosure (e.g., see Exhibit C submitted concurrently herewith). Exhibit C provides an alignment between the polypeptide sequences of SEQ ID NO:109 with SEQ ID NO:42, SEQ ID NO:190, and SEQ ID NO:191 of the instant specification. Applicants believe the Examiners rejection of Claims 48 to 56 has been rendered moot in consideration of Applicants cancellation of the same and that new Claims 57 to 59 are allowable.

V. **Rejections under 35 U.S.C. § 102.**

a. The Examiner has rejected Claims 48 to 50, and 56 under 35 U.S.C. § 102(b) as being anticipated by Nagase et al. (DNA Res. 7(6):346-355 (2000)). Specifically, the Examiner alleges that "Nagase et al, 2000 teach a polynucleotide encoding a polypeptide having 99.6% identity with SEQ ID NO: 109, wherein, at positions corresponding to residues 180 and 193 of SEQ ID NO: 109, said polypeptide has a methionine and an asparagine, respectively"

Applicants have cancelled Claims 48 to 50, and 56 and added new Claims 57 to 59, in the sole interest of facilitating prosecution. New Claims 57 to 59 are not anticipated by Nagase et al since Nagase et al does not teach all of the elements of Claims 57 to 59. Applicants believe the Examiner's rejection of Claims 48 to 50, and 56 has been rendered moot in consideration of Applicants cancellation of the same. In addition, since the Nagase et al. reference does not teach all of the limitations of new Claims 57 to 59, Applicants believe these claims are allowable.

b. The Examiner has rejected Claims 48 to 50, and 56 under 35 U.S.C. § 102(a) as being anticipated by Nagase et al. (Genbank Accession No. gi|12697944 (2001)). Specifically, the Examiner alleges that "Nagase et al, 2001 teach a polynucleotide encoding a polypeptide having 99.6% identity with SEQ ID NO: 109, wherein, at positions corresponding to residues 180 and 193 of SEQ ID NO: 109, said polypeptide has a methionine and an asparagine, respectively."

Applicants have cancelled Claims 48 to 50, and 56 and added new Claims 57 to 59, in the sole interest of facilitating prosecution. New Claims 57 to 59 are not anticipated by Nagase et al since Nagase et al does not teach all of the elements of Claims 57 to 59. Applicants believe the Examiner's rejection of Claims 48 to 50, and 56 has been rendered moot in consideration of Applicants cancellation of the same. In addition, since the Nagase et al. reference does not teach all of the limitations of new Claims 57 to 59, Applicants believe these claims are allowable.

c. The Examiner has rejected Claims 48 to 50, and 56 under 35 U.S.C. § 102(e) as being anticipated by Meyers et al. (U.S. Patent No. 6,664,089). Specifically, the Examiner alleges that "Meyers et al teach a polynucleotide encoding a polypeptide having 99.6% identity with SEQ ID NO: 109, wherein, at positions corresponding to residues 180 and 193 of SEQ ID NO: 109, said polypeptide has a methionine and an asparagine, respectively"

Applicants have cancelled Claims 48 to 50, and 56 and added new Claims 57 to 59, in the sole interest of facilitating prosecution. New Claims 57 to 59 are not anticipated by Meyer et al since Meyer et al does not teach all of the elements of Claims 57 to 59. Applicants believe the

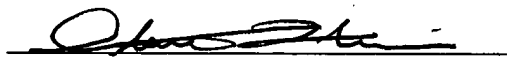
Examiner's rejection of Claims 48 to 50, and 56 has been rendered moot in consideration of Applicants cancellation of the same. In addition, since the Meyer et al. reference does not teach all of the limitations of new Claims 57 to 59, Applicants believe these claims are allowable.

Applicants believe that all of the Examiners rejections and objections have been overcome and that all of the pending claims before the Examiner are in condition for allowance. An early Office Action to that effect is, therefore, earnestly solicited.

A three-month extension is hereby requested pursuant to 37 CFR §1.136(a). Please charge Deposit Account No. 19-3880 in the name of Bristol-Myers Squibb Company in the amount of $1,020 for payment of the extension fee.

If any fee is due in connection herewith not already accounted for, please charge such fee to Deposit Account No. 19-3880 of the undersigned. Furthermore, if any extension of time not already accounted for is required, such extension is hereby petitioned for, and it is requested that any fee due for said extension be charged to the above-stated Deposit Account.

Respectfully submitted,



Stephen C. D'Amico
Agent for Applicants
Reg. No. 46,652

Bristol-Myers Squibb Company
Patent Department
P.O. Box 4000
Princeton, NJ 08543-4000
(609) 252-5289

Date: January 4, 2005

Exhibit A

```
                                 1                                                  50
SEQ ID NO:109-10/029,345     (1) MAHEMIGTQIVTERLVALLESGTEKVLLIDSRPFVEYNTSHILEAININC
 SEQ ID NO:42-60/256,868     (1) MAHEMIGTQIVTERLVALLESGTEKVLLIDSRPFVEYNTSHILEAININC
 SEQ ID NO:42-60/280,186     (1) MAHEMIGTQIVTERLVALLESGTEKVLLIDSRPFVEYNTSHILEAININC

                                51                                                 100
SEQ ID NO:109-10/029,345    (51) SKLMKRRLQQDKVLITELIQHSAKHKVDIDCSQKVVVYDQSSQDVASLSS
 SEQ ID NO:42-60/256,868    (51) SKLMKRRLQQDKVLITELIQHSAKHKVDIDCSQKVVVYDQSSQDVASLSS
 SEQ ID NO:42-60/280,186    (51) SKLMKRRLQQDKVLITELIQHSAKHKVDIDCSQKVVVYDQSSQDVASLSS

                               101                                                 150
SEQ ID NO:109-10/029,345   (101) DCFLTVLLGKLEKSFNSVHLLAGGFAEFSRCFPGLCEGKSTLVPTCISQP
 SEQ ID NO:42-60/256,868   (101) DCFLTVLLGKLEKSFNSVHLLAGGFAEFSRCFPGLCEGKSTLVPTCISQP
 SEQ ID NO:42-60/280,186   (101) DCFLTVLLGKLEKSFNSVHLLAGGFAEFSRCFPGLCEGKSTLVPTCISQP

                               151                                                 200
SEQ ID NO:109-10/029,345   (151) CLPVANIGPTRILPNLYLGCQRDVLNKELIQQNGIGYVLNASYTCPKPDF
 SEQ ID NO:42-60/256,868   (151) CLPVANIGPTRILPNLYLGCQRDVLNKELMQQNGIGYVLNASNTCPKPDF
 SEQ ID NO:42-60/280,186   (151) CLPVANIGPTRILPNLYLGCQRDVLNKELMQQNGIGYVLNASNTCPKPDF

                               201                                                 250
SEQ ID NO:109-10/029,345   (201) IPESHFLRVPVNDSFCEKILPWLDKSVDFIEKAKASNGCVLVHCLAGISR
 SEQ ID NO:42-60/256,868   (201) IPESHFLRVPVNDSFCEKILPWLDKSVDFIEKAKASNGCVLVHCLAGISR
 SEQ ID NO:42-60/280,186   (201) IPESHFLRVPVNDSFCEKILPWLDKSVDFIEKAKASNGCVLVHCLAGISR

                               251                                                 300
SEQ ID NO:109-10/029,345   (251) SATIAIAYIMKRMDMSLDEAYRFVKEKRPTISPNFNFLGQLLDYEKKIKN
 SEQ ID NO:42-60/256,868   (251) SATIAIAYIMKRMDMSLDEAYRFVKEKRPTISPNFNFLGQLLAYEKKIKN
 SEQ ID NO:42-60/280,186   (251) SATIAIAYIMKRMDMSLDEAYRFVKEKRPTISPNFNFLGQLLAYEKKIKN

                               301                                                 350
SEQ ID NO:109-10/029,345   (301) QTGASGPKSKLKLLHLEKPNEPVPAVSEGGQKSETPLSPPCADSATSEAA
 SEQ ID NO:42-60/256,868   (301) QTGASGPKSKLKLLPLEKPNEPVPAVSEGGQKSETPLSPPCADSATSEAA
 SEQ ID NO:42-60/280,186   (301) QTGASGPKSKLKLLPLEKPNEPVPAVSEGGQKSETPLSPPCADSATSEAA

                               351                                                 400
SEQ ID NO:109-10/029,345   (351) GQRPVHPASVPSVPSVQPSLLEDSPLVQALSGLHLSADRLEDSNKLKRSF
 SEQ ID NO:42-60/256,868   (351) GQRPVHPASVPSVPSVQPSLLEDSPLVQALSGLHLSADRLEDSNKLKRSF
 SEQ ID NO:42-60/280,186   (351) GQRPVHPASVPSVPSVQPSLLEDSPLVQALSGLHLSADRLEDSNKLKRSF

                               401                                                 450
SEQ ID NO:109-10/029,345   (401) SLDIKSVSYSASMAASLHGFSSSEDALEYYKPSTTLDGTNKLCQFSPVQE
 SEQ ID NO:42-60/256,868   (401) SLDIKSVSYSASMAASLHGFSSSEDALEYYKPSTTLDGTNKLCQFSPVQE
 SEQ ID NO:42-60/280,186   (401) SLDIKSVSYSASMAASLHGFSSSEDALEYYKPSTTLDGTNKLCQFSPVQE

                               451                                                 500
SEQ ID NO:109-10/029,345   (451) LSEQTPETSPDKEEASIPKKLQTARPSDSQSKRLHSVRTSSSGTAQRSLL
 SEQ ID NO:42-60/256,868   (451) LSEQTPETSPDKEEASIPKKLQTARPSDSQSKRLHSVRTSSSGTAQRSLL
 SEQ ID NO:42-60/280,186   (451) LSEQTPETSPDKEEASIPKKLQTARPSDSQSKRLHSVRTSSSGTAQRSLL

                               501                                                 550
SEQ ID NO:109-10/029,345   (501) SPLHRSGSVEDNYHTSFLFGLSTSQQHLTKSAGLGLKGWHSDILAPQTST
 SEQ ID NO:42-60/256,868   (501) SPLHRSGSVEDNYHTSFLFGLSTSQQHLTKSAGLGLKGWHSDILAPQTST
 SEQ ID NO:42-60/280,186   (501) SPLHRSGSVEDNYHTSFLFGLSTSQQHLTKSAGLGLKGWHSDILAPQTST

                               551                                                 600
SEQ ID NO:109-10/029,345   (551) PSLTSSWYFATESSHFYSASAIYGGSASYSAYSCSQLPTCGDQVYSVRRR
 SEQ ID NO:42-60/256,868   (551) PSLTSSWYFATESSHFYSASAIYGGSASYSAYSCSQLPTCGDQVYSVRRR
 SEQ ID NO:42-60/280,186   (551) PSLTSSWYFATESSHFYSASAIYGGSASYSAYSCSQLPTCGDQVYSVRRR

                               601                                                 650
SEQ ID NO:109-10/029,345   (601) QKPSDRADSRRSWHEESPFEKQFKRRSCQMEPGESIMSENRSREELGKVG
 SEQ ID NO:42-60/256,868   (601) QKPSDRADSRRSWHEESPFEKQFKRRSCQMEPGESIMSENRSREELGKVG
 SEQ ID NO:42-60/280,186   (601) QKPSDRADSRRSWHEESPFEKQFKRRSCQMEPGESIMSENRSREELGKVG

                               651        665
SEQ ID NO:109-10/029,345   (651) SQSSFSGSMEIIEVS
 SEQ ID NO:42-60/256,868   (651) SQSSFSGSMEIIEVS
 SEQ ID NO:42-60/280,186   (651) SQSSFSGSMEIIEVS
```

Exhibit B

```
                                    1                                                  50
  SEQ ID NO:109-10/029,345    (1)   MAHEMIGTQIVTERLVALLESGTEKVLLIDSRPFVEYNTSHILEAININC
SEQ ID NO:247 - 10/648,593    (1)   MAHEMIGTQIVTERLVALLESGTEKVLLIDSRPFVEYNTSHILEAININC

                                   51                                                  100
  SEQ ID NO:109-10/029,345    (51)  SKLMKRRLQQDKVLITELIQHSAKHKVDIDCSQKVVVYDQSSQDVASLSS
SEQ ID NO:247 - 10/648,593    (51)  SKLMKRRLQQDKVLITELIQHSAKHKVDIDCSQKVVVYDQSSQDVASLSS
                                          c
                                  101                                                  150
  SEQ ID NO:109-10/029,345    (101) DCFLTVLLGKLEKSFNSVHLLAGGFAEFSRCFPGLCEGKSTLVPTCISQP
SEQ ID NO:247 - 10/648,593    (101) DCFLTVLLGKLEKSFNSVHLLAGGFAEFSRCFPGLCEGKSTLVPTCISQP

                                  151                                                  200
  SEQ ID NO:109-10/029,345    (151) CLPVANIGPTRILPNLYLGCQRDVLNKELIQQNGIGYVLNASYTCPKPDF
SEQ ID NO:247 - 10/648,593    (151) CLPVANIGPTRILPNLYLGCQRDVLNKELMQQNGIGYVLNASNTCPKPDF

                                  201                                                  250
  SEQ ID NO:109-10/029,345    (201) IPESHFLRVPVNDSFCEKILPWLDKSVDFIEKAKASNGCVLVHCLAGISR
SEQ ID NO:247 - 10/648,593    (201) IPESHFLRVPVNDSFCEKILPWLDKSVDFIEKAKASNGCVLVHCLAGISR

                                  251                                                  300
  SEQ ID NO:109-10/029,345    (251) SATIAIAYIMKRMDMSLDEAYRFVKEKRPTISPNFNFLGQLLDYEKKIKN
SEQ ID NO:247 - 10/648,593    (251) SATIAIAYIMKRMDMSLDEAYRFVKEKRPTISPNFNFLGQLLDYEKKIKN

                                  301                                                  350
  SEQ ID NO:109-10/029,345    (301) QTGASGPKSKLKLLHLEKPNEPVPAVSEGGQKSETPLSPPCADSATSEAA
SEQ ID NO:247 - 10/648,593    (301) QTGASGPKSKLKLLHLEKPNEPVPAVSEGGQKSETPLSPPCADSATSEAA

                                  351                                                  400
  SEQ ID NO:109-10/029,345    (351) GQRPVHPASVPSVPSVQPSLLEDSPLVQALSGLHLSADRLEDSNKLKRSF
SEQ ID NO:247 - 10/648,593    (351) GQRPVHPASVPSVPSVQPSLLEDSPLVQALSGLHLSADRLEDSNKLKRSF

                                  401                                                  450
  SEQ ID NO:109-10/029,345    (401) SLDIKSVSYSASMAASLHGFSSSEDALEYYKPSTTLDGTNKLCQFSPVQE
SEQ ID NO:247 - 10/648,593    (401) SLDIKSVSYSASMAASLHGFSSSEDALEYYKPSTTLDGTNKLCQFSPVQE

                                  451                                                  500
  SEQ ID NO:109-10/029,345    (451) LSEQTPETSPDKEEASIPKKLQTARPSDSQSKRLHSVRTSSSGTAQRSLL
SEQ ID NO:247 - 10/648,593    (451) LSEQTPETSPDKEEASIPKKLQTARPSDSQSKRLHSVRTSSSGTAQRSLL

                                  501                                                  550
  SEQ ID NO:109-10/029,345    (501) SPLHRSGSVEDNYHTSFLFGLSTSQQHLTKSAGLGLKGWHSDILAPQTST
SEQ ID NO:247 - 10/648,593    (501) SPLHRSGSVEDNYHTSFLFGLSTSQQHLTKSAGLGLKGWHSDILAPQTST

                                  551                                                  600
  SEQ ID NO:109-10/029,345    (551) PSLTSSWYFATESSHFYSASAIYGGSASYSAYSCSQLPTCGDQVYSVRRR
SEQ ID NO:247 - 10/648,593    (551) PSLTSSWYFATESSHFYSASAIYGGSASYSAYSCSQLPTCGDQVYSVRRR

                                  601                                                  650
  SEQ ID NO:109-10/029,345    (601) QKPSDRADSRRSWHEESPFEKQFKRRSCQMEFGESIMSENRSREELGKVG
SEQ ID NO:247 - 10/648,593    (601) QKPSDRADSRRSWHEESPFEKQFKRRSCQMEFGESIMSENRSREELGKVG

                                  651         665
  SEQ ID NO:109-10/029,345    (651) SQSSFSGSMEIIEVS
SEQ ID NO:247 - 10/648,593    (651) SQSSFSGSMEIIEVS
```

Exhibit C

```
                                                1                                                  50
SEQ ID NO:109-10/029,345          (1) MAHEMIGTQIVTERLVALLESGTEKVLLIDSRPFVEYNTSHILEAININC
SEQ ID NO:42 - 10/648,593         (1) MAHEMIGTQIVTERLVALLESGTEKVLLIDSRPFVEYNTSHILEAININC
SEQ ID NO:190 - 10/648,593        (1) MAHEI-GTQIVTERLVALLESGTEKVLLIDSRPFVEYNTSHILEAININC
SEQ ID NO:191 - 10/648,593        (1) MAHEIVGTQIVTERLVALLESGTEKVLLIDSRPFVEYNTSHILEAININC

                                               51                                                 100
SEQ ID NO:109-10/029,345         (51) SKLMKRRLQQDKVLITELIQHSAKHKVDIDCSQKVVVYDQSSQDVASLSS
SEQ ID NO:42 - 10/648,593        (51) SKLMKRRLQQDKVLITELIQHSAKHKVDIDCSQKVVVYDQSSQDVASLSS
SEQ ID NO:190 - 10/648,593       (50) SKLMKRRLQQDKVLITELIQHSAKHKVDIDCSQKVVVYDQSSQDVASLSS
SEQ ID NO:191 - 10/648,593       (51) SKLMKRRLQQDKVLITELIQHSAKHKVDIDCSQKVVVYDQSSQDVASLSS

                                              101                                                 150
SEQ ID NO:109-10/029,345        (101) DCFLTVLLGKLEKSFNSVHLLAGGFAEFSRCFPGLCEGKSTLVPTCISQP
SEQ ID NO:42 - 10/648,593       (101) DCFLTVLLGKLEKSFNSVHLLAGGFAEFSRCFPGLCEGKSTLVPTCISQP
SEQ ID NO:190 - 10/648,593      (100) DCFLTVLLGKLEKSFNSVHLLAGGFAEFSRCFPGLCEGKSTLVPTCISQP
SEQ ID NO:191 - 10/648,593      (101) DCFLTVLLGKLEKSFNSVHLLAGGFAEFSRCFPGLCEGKSTLVPTCISQP

                                              151                                                 200
SEQ ID NO:109-10/029,345        (151) CLPVANIGPTRILPNLYLGCQRDVLNKELIQQNGIGYVLNASYTCPKPDF
SEQ ID NO:42 - 10/648,593       (151) CLPVANIGPTRILPNLYLGCQRDVLNKELMQQNGIGYVLNASNTCPKPDF
SEQ ID NO:190 - 10/648,593      (150) CLPVANIGPTRILPNLYLGCQRDVLNKELMQQNGIGYVLNASNTCPKPDF
SEQ ID NO:191 - 10/648,593      (151) CLPVANIGPTRILPNLYLGCQRDVLNKELMQQNGIGYVLNASNTCPKPDF

                                              201                                                 250
SEQ ID NO:109-10/029,345        (201) IPESHFLRVPVNDSFCEKILPWLDKSVDFIEKAKASNGCVLVHCLAGISR
SEQ ID NO:42 - 10/648,593       (201) IPESHFLRVPVNDSFCEKILPWLDKSVDFIEKAKASNGCVLVHCLAGISR
SEQ ID NO:190 - 10/648,593      (200) IPESHFLRVPVNDSFCEKILPWLDKSVDFIEKAKASNGCVLVHCLAGISR
SEQ ID NO:191 - 10/648,593      (201) IPESHFLRVPVNDSFCEKILPWLDKSVDFIEKAKASNGCVLVHCLAGISR

                                              251                                                 300
SEQ ID NO:109-10/029,345        (251) SATIAIAYIMKRMDMSLDEAYRFVKEKRPTISPNFNFLGQLLDYEKKIKN
SEQ ID NO:42 - 10/648,593       (251) SATIAIAYIMKRMDMSLDEAYRFVKEKRPTISPNFNFLGQLLAYEKKIKN
SEQ ID NO:190 - 10/648,593      (250) SATIAIAYIMKRMDMSLDEAYRFVKEKRPTISPSFNFLGQLLDYEKKIKN
SEQ ID NO:191 - 10/648,593      (251) SATIAIAYIMKRMDMSLDEAYRFVKEKRPTISPSFNFLGQLLDYEKKIKN

                                              301                                                 350
SEQ ID NO:109-10/029,345        (301) QTGASGPKSKLKLLHLEKPNEPVPAVSEGGQKSETPLSPPCADSATSEAA
SEQ ID NO:42 - 10/648,593       (301) QTGASGPKSKLKLLPLEKPNEPVPAVSEGGQKSETPLSPPCADSATSEAA
SEQ ID NO:190 - 10/648,593      (300) QAGASGPKSKLKLLHLEKPNEPVPAVSEGGQKSETPLSPPCADSATSEAA
SEQ ID NO:191 - 10/648,593      (301) QT----------------------------------------------------

                                              351                                                 400
SEQ ID NO:109-10/029,345        (351) GQRPVHPASVPSVPSVQPSLLEDSPLVQALSGLHLSADRLEDSNKLKRSF
SEQ ID NO:42 - 10/648,593       (351) GQRPVHPASVPSVPSVQPSLLEDSPLVQALSGLHLSADRLEDSNKLKRSF
SEQ ID NO:190 - 10/648,593      (350) GQRPVHPASVPSVPSVQPSLLEDSPLVQALSGLHLSADRLEDSNKLKRSF
SEQ ID NO:191 - 10/648,593      (303) ----------------------------------------------------

                                              401                                                 450
SEQ ID NO:109-10/029,345        (401) SLDIKSVSYSASMAASLHGFSSSEDALEYYKPSTTLDGTNKLCQFSPVQE
SEQ ID NO:42 - 10/648,593       (401) SLDIKSVSYSASMAASLHGFSSSEDALEYYKPSTTLDGTNKLCQFSPVQE
SEQ ID NO:190 - 10/648,593      (400) SLDIKSVSYSASMAASLHGFSSSEDALEYYKPSTTLDGTNKLCQFSPVQE
SEQ ID NO:191 - 10/648,593      (303) ----------------------------------------------------

                                              451                                                 500
SEQ ID NO:109-10/029,345        (451) LSEQTPETSPDKEEASIPKKLQTARPSDSQSKRLHSVRTSSSGTAQRSLL
SEQ ID NO:42 - 10/648,593       (451) LSEQTPETSPDKEEASIPKKLQTARPSDSQSKRLHSVRTSSSGTAQRSLL
SEQ ID NO:190 - 10/648,593      (450) LSEQTPETSPDKEEASIPKKLQTARPSDSQSKRLHSVRTSSSGTAQRSLL
SEQ ID NO:191 - 10/648,593      (303) ----------------------------------------------------

                                              501                                                 550
SEQ ID NO:109-10/029,345        (501) SPLHRSGSVEDNYHTSFLFGLSTSQQHLTKSAGLGLKGWHSDILAPQTST
SEQ ID NO:42 - 10/648,593       (501) SPLHRSGSVEDNYHTSFLFGLSTSQQHLTKSAGLGLKGWHSDILAPQTST
SEQ ID NO:190 - 10/648,593      (500) SPLHRSGSVEDNYHTSFLFGLSTSQQHLTKSAGLGLKGWHSDILAPQTST
SEQ ID NO:191 - 10/648,593      (303) ----------------------------------------------------
```

Exhibit C (Cont'd)

```
                                    551                                                 600
SEQ ID NO:109-10/029,345   (551)  PSLTSSWYFATESSHFYSASAIYGGSASYSAYSCSQLPTCGDQVYSVRRR
SEQ ID NO:42 - 10/648,593  (551)  PSLTSSWYFATESSHFYSASAIYGGSASYSAYSCSQLPTCGDQVYSVRRR
SEQ ID NO:190 - 10/648,593 (550)  PSLTSSWYFATESSHFYSASAIYGGSASYSAYSRSQLPTCGDQVYSVRRR
SEQ ID NO:191 - 10/648,593 (303)  --------------------------------------------------

                                    601                                                 650
SEQ ID NO:109-10/029,345   (601)  QKPSDRADSRRSWHEESPFEKQFKRRSCQMEFGESIMSENRSREELGKVG
SEQ ID NO:42 - 10/648,593  (601)  QKPSDRADSRRSWHEESPFEKQFKRRSCQMEFGESIMSENRSREELGKVG
SEQ ID NO:190 - 10/648,593 (600)  QKPSDRADSRRSWHEESPFEKQFKRRSCQMEFGESIMSENRSREELGKVG
SEQ ID NO:191 - 10/648,593 (303)  --------------------------------------------------

                                    651         665
SEQ ID NO:109-10/029,345   (651)  SQSSFSGSMEIIEVS
SEQ ID NO:42 - 10/648,593  (651)  SQSSFSGSMEIIEVS
SEQ ID NO:190 - 10/648,593 (650)  SQSSFSGSMEIIEVS
SEQ ID NO:191 - 10/648,593 (303)  ---------------
```

D0072

ATCC

10801 University Blvd • Manassas, VA 20110-2209 • Telephone: 703-365-2700 • FAX: 703-365-2745

BUDAPEST TREATY ON THE INTERNATIONAL RECOGNITION OF THE DEPOSIT OF MICROORGANISMS FOR THE PURPOSES OF PATENT PROCEDURE

INTERNATIONAL FORM

RECEIPT IN THE CASE OF AN ORIGINAL DEPOSIT ISSUED PURSUANT TO RULE 7.3 AND VIABILITY STATEMENT ISSUED PURSUANT TO RULE 10.2

To: (Name and Address of Depositor or Attorney)

Bristol-Myers Squibb Company
Attn: Stephen B. Davis
P.O. Box 4000
Princeton, NJ 08543

Deposited on Behalf of: Bristol-Myers Squibb Company

Identification Reference by Depositor:

Patent Deposit Designation

A mixture of 10 plasmid cDNAs: BMS-Group F { btafi in pFastBac1; BGS19, BMY-hPP1, and BMY-hPP2 in pCMV-Sport; hVR1d.1 and hVR1d.2 in pcDNA3.1; hGPCR-BMY31, hGPCR-BMY38, and hLLRNS-3 in pSPORT1; and hBMYCNG in pSPORT2}

PTA-3949

The deposit was accompanied by: __ a scientific description _ a proposed taxonomic description indicated above.

The deposit was received December 22, 2001 by this International Depository Authority and has been accepted.

AT YOUR REQUEST: X We will inform you of requests for the strain for 30 years.

The strain will be made available if a patent office signatory to the Budapest Treaty certifies one's right to receive, or if a U.S. Patent is issued citing the strain, and ATCC is instructed by the United States Patent & Trademark Office or the depositor to release said strain.

If the culture should die or be destroyed during the effective term of the deposit, it shall be your responsibility to replace it with living culture of the same.

The strain will be maintained for a period of at least 30 years from date of deposit, or five years after the most recent request for a sample, whichever is longer. The United States and many other countries are signatory to the Budapest Treaty.

The viability of the culture cited above was tested January 17, 2002. On that date, the culture was viable.

International Depository Authority: American Type Culture Collection, Manassas, VA 20110-2209 USA.

Signature of person having authority to represent ATCC:

Marie Harris

Marie Harris, Patent Specialist, Patent Depository

Date: February 6, 2002

cc: Stephen Damico
(Ref: Docket or Case No.: D0214, D0227, D0072, D0109, D0196, D0212, D0234, D0187)